DOCUMENT RESUME

ED 386 059 FL 023 223

AUTHOR Coniam, David; And Others
TITLE Computer-Mediated Communication and Teacher Education: The Case of "Telenex."
PUB DATE 94
NOTE 20p.; In: Bird, Norman, Ed., And Others. Language and Learning. Papers presented at the Annual International Language in Education Conference (Hong Kong, 1993); see FL 023 205.
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Classroom Techniques; *Computer Networks; Computer Oriented Programs; Databases; *English (Second Language); Foreign Countries; Higher Education; Inservice Teacher Education; Item Banks; *Language Teachers; Secondary Education; Second Language Instruction; *Teacher Education; *Telecommunications
IDENTIFIERS *Telenex; University of Hong Kong

ABSTRACT

The computer network Telenex (Teachers of English Language Education Nexus) established at the University of Hong Kong is described. The network was conceived to provide professional support to secondary school English-as-a-Second-Language (ESL) teachers in Hong Kong, and is monitored by a team of ESL teachers and teacher educators. Its components include databases (a bank of validated test items, teaching ideas, grammar and related teaching ideas, and news about current developments in the profession) and communications (electronic mail, conferencing, and task group messaging at each instructional level). The testing database is calibrated to a common ability scale, and is designed for both construction and validation of tests. The teaching ideas database, created in hypertext, contains practical activities for each language skill area. The grammar database, also in hypertext, also contains grammar-related teaching activities designed for communicative language teaching. Contains 24 references. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 386 059

COMPUTER-MEDIATED COMMUNICATION AND TEACHER EDUCATION: THE CASE OF TELENEX (COLLOQUIUM REPORT)

DAVID CONIAM, SIMA SENGUPTA, AMY B.M. TSUI AND WU KAM-YIN

BEST COPY AVAILABLE

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

J.D. Clark

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC).

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

FL023223

COMPUTER-MEDIATED COMMUNICATION AND TEACHER EDUCATION: THE CASE OF *TELENEX*

David Coniam, Sima Sengupta, Amy B.M. Tsui and Wu Kam-yin

1. The Conception of *TeleNex*

Amy B.M. Tsui

1.1 Introduction

In the last ten years, there has been an increasing exploitation of telecommunications for educational purposes. Many computer networks have been set up to enable students to communicate with each other inside and outside the country. Networks have also been set up to link schools with tertiary institutions so that students can access the university libraries and communicate with university staff (see for example Meadows 1992). The application of telecommunications in teacher education, however, is very recent (see also Davis 1991). This paper describes a computer network *TeleNex* (Teachers of English Language Education Nexus) set up by TELEC (Teachers of English Language Education Centre) at The University of Hong Kong to provide professional support to English language teachers in secondary schools in Hong Kong. This section outlines the conception of this network, and presents its database and communication components. Later parts of the paper offer more detailed discussion of the issues involved in the design and organization of the three databases that comprise the present database component.

1.2 Computer network and professional support for ESL teachers

In recent years, there has been a constant shortage of teachers in all subjects, both as a result of the introduction of compulsory education in Hong Kong in 1978 and as a result of an increasing number of people emigrating with the change of sovereignty in 1997 drawing near. The problem of teacher shortage in ESL is further aggravated by the fact that ESL takes up the highest number of teaching hours in the curriculum, hence requiring more teachers, and the fact that graduates who are proficient in English tend to be lured away by business with lucrative offers because they are very much in demand. This results in an ESL teaching force that is largely composed of teachers who were not subject trained. In a survey of teachers in Hong Kong conducted by the Education Department in 1991, it was found that among the 3700 graduate teachers of English, only 27% are subject trained, that is, they were English majors in their undergraduate studies, and only 21% are both subject and professionally trained (author's analysis). The picture is even more disconcerting when one looks at the whole secondary English language teaching population, which is 5240. The percentage of teachers who are subject

trained drops from 27% to 18.9 %, and the percentage of teachers who are both subject and professionally trained drops from 21% to 14.2%. The percentage of English teachers who have had initial and refresher training is 7.4% and the percentage of graduate English teachers who have had initial and refresher training comes to as low as 2.3% (see Tsui 1993).

In view of the academic and professional background of English language teachers, it was felt that apart from the conventional way of providing in-service initial and refresher training courses, there should be a way in which teachers can obtain professional support wherever and whenever they need it. There should also be a way in which teachers can give each other professional (and emotional) support. Drawing on the experience of CATNET, which is an electronic bulletin board system set up for computer teachers in schools in Hong Kong where members join on a voluntary basis from their home computers, it was thought that a similar network could be set up for English language teachers. However, the experience of CATNET shows that discussion among teachers must be sustained by a discussion leader, otherwise it will die off very quickly (see Ip 1989). Therefore, rather than replicating what other networks have been doing, it was felt that the network to be set up should be monitored and supported by academic staff at the university. It was also thought that the network could be further exploited to provide resources for teachers to help them in their everyday teaching and to enhance teachers' knowledge base by providing them with some basic information about how the English language works. The idea was put forward to Hong Kong Telecom Foundation who agreed not only to provide funding for the project but also the hardware and the communication lines. TELEC was established in June 1993, with the full staff , consisting of the equivalent of three full-time academic staff, one computer and two clerical staff in place in Sept 1993. The academic staff are ESL teacher educators and experienced ESL teachers (hereafter referred to as the TELEC team). By the end of November 1993, 15 schools were linked up with the Centre with over 130 teachers registered as participating teachers.

1.3 Components of *TeleNex*

Most computer networks enable users to access information and/or to communicate with each other via electronic mail to share ideas and to collaborate on projects. *TeleNex* differs from these networks in that it is monitored and supported by a team of ESL teachers and ESL teacher educators, as mentioned above. Apart from enabling teachers to talk to each other via e-mail, to collaborate on projects and to seek advice from the Centre staff, it also provides several databases which are specially designed and written by the team to meet the needs of the teachers. The following diagram summarizes its components and their functions.

As we can see from Figure 1, there are two components to the network: database and communication. The database component consists of three databases. The test bank database provides a bank of validated items from which teachers can draw items and compile test papers. It also encourages teachers to send in test papers that they have produced themselves which, after validation and selection,

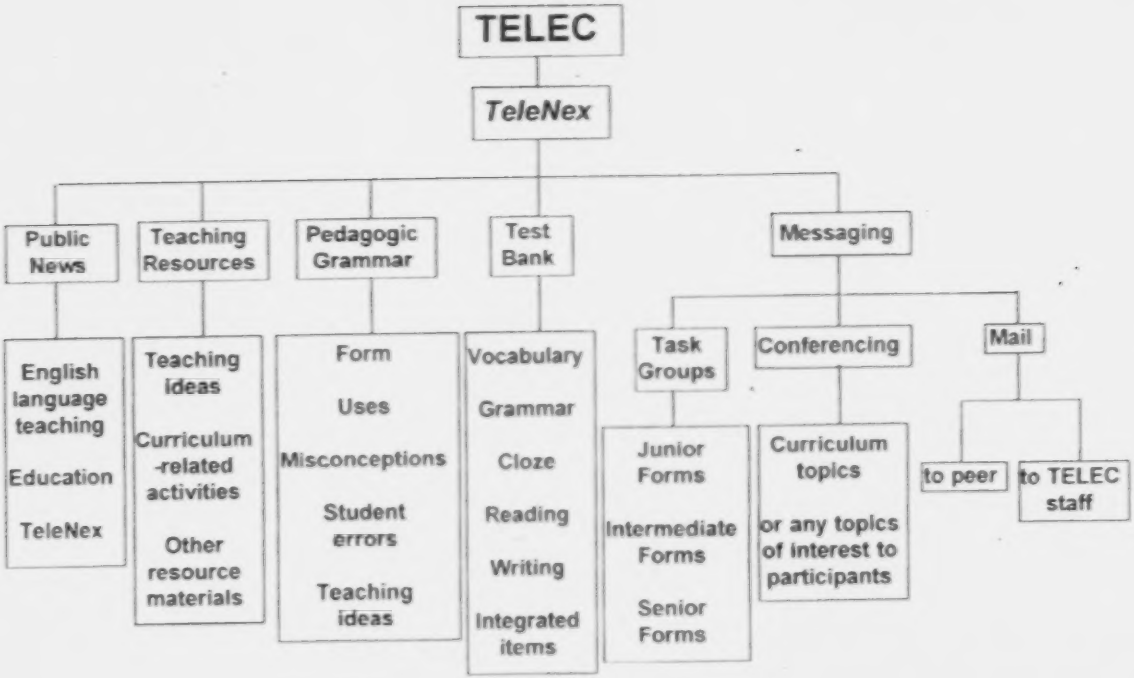

TELEC
TeleNex
Public News
Teaching Resources
Pedagogic Grammar
Test Bank
Messaging
English language teaching
Education
TeleNex
Teaching ideas
Curriculum -related activities
Other resource materials
Form
Uses
Misconceptions
Student errors
Teaching ideas
Vocabulary
Grammar
Cloze
Reading
Writing
Integrated items
Task Groups
Conferencing
Mail
Junior Forms
Intermediate Forms
Senior Forms
Curriculum topics
or any topics of interest to participants
to peer
to TELEC staff

Figure 1

will be stored in the bank for teachers to use. (See Section 2 for a detailed discussion of how this database works.) The teaching ideas database aims to help diagramteachers in their everyday teaching. Teaching ideas and the rationale behind the ideas are provided as well as some classroom materials and activities that teachers can download and use in the classroom. (See Section 3 for a detailed discussion of the design of this database.) The grammar database aims to enhance the subject knowledge of ESL teachers by providing some basic information about how the English language works, what the common misconceptions and how best to teach them. (See Section 4 for detailed discussion of the design and organization of this database.) Finally, the news database provides information about current developments in education and English language teaching, which is an important part of the professional development of teachers. It also keeps participating teachers informed of the recent developments in *TeleNex*.

1.4 Features of *TeleNex*

There are two outstanding features of *TeleNex*: it is both interactive and collaborative. Databases are usually for information retrieval only. The databases of *TeleNex*, however, are interactive. Teachers can send in their comments and questions about the database as they are going through it. Upon receiving comments and questions, the Centre staff will make the necessary revisions in the databases. This enables the databases to undergo constant revision so that they will better meet the needs of teachers. The databases are also collaborative. The resource materials and activities are initially written by the TELEC team. However, teachers are encouraged to send in materials that they have tried out in their classrooms and have worked well. Both the grammar and the teaching ideas databases now contain contributions from participating teachers, most of which have been tried out and have proved to work well.

The communication component consists of three parts: mail, conferences and task groups. The mail part allows teachers to send questions to the TELEC team for advice or for answers, or to send individual mail to each other. The conference part allows teachers to exchange views, ideas and even frustrations. This kind of sharing and mutual support is very important for the morale and the professional development of teachers. As the director of one of the largest collaborative networks in the US points out, "The network makes teachers feel empowered. When they've had a discouraging day, they have someone they can talk to." (Mangan 1992). The task group allows teachers to collaborate on curriculum projects and address problems in teaching. These task groups are organized by teachers themselves. Any teacher can start a task group if he/she wants to and invite other teachers to join. For example, a Form Five teacher may be worried about preparing students for the new public examination on speaking skills which will be introduced in April 1994. He/She can start a task group to address this problem. Teachers can share ideas, materials, or even work on some oral packages to prepare students for the examination. These task groups will be monitored by the TELEC team to ensure that the discussion is sustained and that an outcome is achieved. Task groups will be closed down when they have accomplished their tasks. Hence,

instead of the teacher just looking to the TELEC team for support, the teachers giving each other support which is very important in empowering teachers and helping them to develop professionally. In other words, *TeleNex* is a network supported collaboratively by teachers and teacher educators.

In addition to providing service to teachers, there is a further research element in *TeleNex* which is built into the computer programme from the very beginning. The software allows us to keep track of the patterns of use. This includes aspects like which screens are often browsed by teachers and which ones are never browsed, what are the peak hours of use, what are the patterns of interaction, which task groups flourish and which die very quickly. All of this is valuable information which helps the TELEC team to understand the teachers better and to improve the network.

By inviting teachers to send in ideas, materials and test papers that have been tried out in classrooms, and by getting them to share their problems with the TELEC team and with their fellow teachers, the team is keeping a close contact with the real classroom. By conducting research into user patterns, the team is gaining better knowledge about the teachers so that it can provide them with the kind of support that will help them to develop professionally.

The remaining sections of this paper offer detailed discussion of the design of the three databases:

- test band database (Section 2)
- study ideas database (Section 3)
- grammar-database (Section 4)

2. Constructing an Open-Access Testing Database for Teachers

David Coniam

2.1 Preamble

The testing TeleNex database has the objective of supplying teachers with a variety of reliable tests at various levels across the secondary school age and ability range. Work has been conducted in certain other countries to build up test banks for teachers (Van Thiel and Zwarts 1986). The majority of such test database construction has, however, centred around item response theory (IRT) techniques in order to build calibrated item banks than to construct an open-access testing database for teachers. See, e.g. Millman and Arter 1984.

Most teachers in Hong Kong engage in some form or other of testing, in that they produce tests for mid- or end-of-term examination purposes. They then discard them

once the test is over, only to have subsequently to produce further tests for the same age-group or similar ability levels.

One of the aims of the TeleNex testing database is therefore to reduce this wastage of effort, to recycle as far as possible (since most schools work to a common syllabus,) so that teachers can draw appropriate and reliable tests off the network when they need them. The question of quality is, however, one that is not to be taken lightly since the fact that a teacher produces a test does not necessarily imply that it will be a good test. This matter, however, is not one that can be addressed in the current paper.

2.2 One Step Forward, Two Steps Back: Calibrated Item Scale

A test produced by a teacher for a particular class, which is then to be fed back into the system, needs to be inserted into the database at a point which is appropriate for the ability levels of other schools and classes. It therefore appeared necessary to take one step backward and examine the merit of constructing a common scale before the above could be achieved. The fact that the intention was to construct a scale of ability suggested that the most appropriate model would be one based on IRT techniques, (see e.g. Wright and Stone 1979, Henning 1984, 1987). The measurement unit in this model is derived from logarithms and is known as a logit: one logit corresponds roughly to one standard deviation.

2.3 The Common Scale

Using tests for Secondary 1 - Secondary 7 with common linking items throughout, a common scale was established. The data was then analyzed using the one-parameter IRT model with the *Bigsteps* computer program (Linacre and Wright 1993). Logit values were re-scaled to a normative mean of 60, with a spacing factor of 9.1, in order to present measurement values that teachers might more easily recognise for comparative purposes. The results are presented in table 1 below.

Table-1

Test Analyses: Rescaled Mean Logit Values of Common Items

S7	88.8
S6	84.9
S5	78.7
S4	70.7
S3	68.4
S2	67.2
S1	60.0

The scale that has emerged shows a range of 28.8 points - 3.16 logits, confirming data presented by Henning (1984) where he describes a rather shorter scale produced from the results of US college students. It can also be seen that the scale is not linear. There is generally half a standard deviation (half a logit) of difference between the forms. This is, however, not the case with the between S2 and S3, where ability differences appears to be minimal. Since the present paper is an operational one about the TeleNex testing database, the reader is referred for further details to Coniam (forthcoming).

2.4 Two Sides to the System

The testing database can therefore be viewed from two angles: the tests teachers can access freely from the database, and the calibrated items they take in order to determine where a test they have produced should fit into the database, or where their students fit into the ability scale, and hence what material is appropriate for them.

For example, a teacher has an S4 class she wants an appropriate test for. She is initially given 10 calibrated items with an approximate mean of 72 (cf. table 1 above) and she then selects testing material from this approximate level. Her students take the test and she sends their answer scripts to the TeleNex testing database team. Upon analysis, her students emerge with a mean of 79.5. We inform her of this fact, suggesting that in future she should select material from around level 79. This, as can be seen is more in the region of S5.

A similar case exists when a teacher produces a test, let us say for an S2 class. She asks the computer for some calibrated items and is given 20 with an approximate mean of 68. Students scripts are sent to us as before. An analysis of this test reveals a mean of 61.1, suggesting that the test the teacher has produced is more fitting an S1 class than an S2, and is therefore inserted into the database at level 61.

In addition to the teacher-produced tests, the Hong Kong Examinations Authority has very kindly consented to letting TeleNex make its past papers available on the database. This is a very useful facility for teachers from two perspectives. It means that not only will past papers now be available to teachers, rather than - as is too often the case - inconveniently disappearing, but also teachers will be able to construct their own mock public examinations by mixing and matching test types out of a number of past papers, rather than being constrained to a single fixed order.

2.5 Selecting/Designing a Test

In order to select a test, a teacher has to go through a number of steps. Assuming that she has taken testing material off the database from a particular class before, the teacher is first presented with the ability level of the class she intends to design

a test for: this can be left to the default ability score stored in the database, or the teacher can request material of a more or less demanding nature.

She then selects the material she wants according to the following criteria:

- test item type
- number of items
- topic
- maturity level (While a very able S2 class may be of an approximate S5 level in terms of ability, such a class will not necessarily be sufficiently mature to handle S5 level material. This point needs to be carefully considered.)

The teacher has been making the above selections from menus. It is possible to briefly preview material selected before the final product is assembled.

Once the teacher is happy with all her selections, the final process is to pass whatever material the teacher has selected to the computer's word processor. The whole test is then sequentially renumbered (and questions randomised in the case of multiple-choice questions) and formatted, the name of the school and class are added to the head of the test, and an answer key is generated. The teacher can then re-format the test if she so wishes, adding any special rubric, instructions, etc., before she prints the test out.

3. Considerations and Constraints in Developing a Teaching Ideas Database

Sima Sengupta

This section will describe the 'teaching ideas' database that is being developed as a part of the *TeleNex* network. First a general description of the salient features of the *TeleNex* network and the teaching ideas database will be provided. Then the possibilities and problems of authoring a hypertext database will be discussed. This will be followed by a demonstration of how these factors have influenced the organisation of the teaching ideas database developed so far.

3.1 An Overview: *TeleNex*

This database, as part of an interactive network (*TeleNex*), supports participatory design (Greenbaum and Kyng 1991) where users are able to participate and collaborate with the development team in the process of design. Participation at different levels loosely matches the steps of Good's model (1992) of ideal participatory design consisting of five phases:

- relationship building
- contextual inquiry
- brainstorming
- story boarding
- iterative design

At the relationship building stage some teachers were familiarised with the development process as the design progressed, and these teachers were brought in to comment on the content, lay-out and the organisation. For contextual inquiry and brainstorming, Good's second and third steps were built into a needs assessment study carried out through a questionnaire survey of all the participating teachers. However, the next two steps of the model, story boarding and iterative design, were unnecessary because of three special features of 'participation' offered by *TeleNex*. Firstly, the network allows users to comment on and annotate each screen they read and the host records the details such as the screen annotated, the user, the site and the date. The database team then act on the comments. In addition, the 'teaching ideas' come with an evaluation icon enabling teachers to make overall comments. Thirdly, the system can chart the pattern of use or the path an individual user has followed, i.e. the time the user has spent on each screen, the number of times he/she has gone back to the screen and the way he/she has navigated through the screens. Therefore, this participation intertwines developmental and evaluative activities, where the ultimate shape will be determined by user demands and requirements.

3.2 An Overview: Teaching Ideas

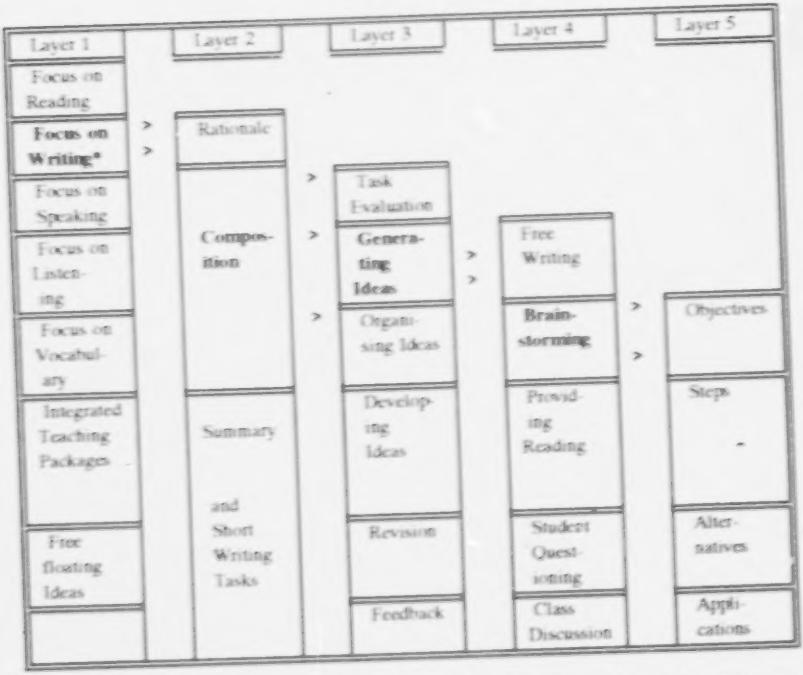
The teaching ideas database for TELEC aimed at providing practical activities which would serve both immediate and long-term needs of the classroom teacher. The first layer of 'teaching ideas' consists of the following 'Overview.'

- Focus on Writing
- Focus on Speaking
- Focus on Listening
- Focus on Vocabulary
- Integrated Teaching Packages
- Free floating Activities

Under these layers further layers are subsumed as pull down menus. An example of the layering within the domain 'Focus on Writing' is presented in figure 2 below. As we can see within 'Focus on Writing', there are four layers of pull down menus and a fifth layer of possible selections. The topmost layer is **Focus on Writing**, which is subdivided into three parts at the second layer. Each item on this layer subsumes another layer, such as the six items under **Composition**. This third layer contains another layer of information, as the example **Generating Ideas** shows. The fourth layer of items such as **Brainstorming** subsumes a final layer consisting of individual screens, which can be selected from a menu, for example by clicking **Brainstorming**. At the time of writing this paper the domain 'Focus on Writing' is still under development.

Figure 2

Focus on Writing: Layers



* Bold letters signify the item clicked by the user and next layer that appears on the screen.

3.3 Possibilities and Problems of Hypertext Writing

The endeavour of creating a database has enormous possibilities as well as a few constraints. The writing of a database shares some common grounds with authoring a book; both, at the very least, have to be coherent, adequately researched, well planned and well thought out. However, the similarity ends there.

An author can have an adequate mental representation of a book since the presentation of information is linear. Therefore, the reader can be expected to look up required information by referring to a page or a chapter. The print medium also gives the reader more time to process the data and to move to new or related information.

Hypertext, on the other hand, needs different organisational devices, needs more sensitivity to reader needs and can make fewer assumptions about the reader/user (Denton and Kelly 1992). The hypertext writer is not bound by linearity and this makes a variety of organisational alternatives possible. However, other kinds of constraints are posed by attempting to map the hierarchy of information, the depth of layers, the nodes or chunks of information that should be grouped together and the links that have to be established between these chunks for easy navigation (Woodhead 1991). Consideration of these constraints have played a role in the organisation and writing of this database although from the very outset the focus has been and still is on exploring how to make adequate use of technology to support the conceptual content of the database (Pugh 1993).

3.4 Practical Implications: Organisation

The possibilities offered by non-linear presentation of information has meant that 'Focus on Writing' can incorporate multiple organisational perspectives. Users have the following alternative entry points:

- They can enter at the level of 'Overview', which introduces them to the overview of the database. Layer 1 in figure 2 can be the starting point that users click for browsing through the layers. For example, a teacher wishing to get some ideas about teaching writing will choose **Focus on Writing**.

- They can choose to get into the database through the kind of writing they want to teach, i.e. through layer 2 in figure 2, and then make their selection.

- They can also enter the database to find teaching ideas for a particular dimension of writing, for example how to teach organisational strategies for composition (layer 3 in figure 2).

- They can also choose a particular activity as an entry point, such as **Brainstorming** for generating ideas.

Other entries will be possible through the search mechanism:

- Users are also able to make topic-based choices, i.e. they can look at the variety of writing topics, such as a descriptive topic, and see how such a topic can be presented to students. This is layer 5 (**Alternatives**) in figure 2.

- Users may also choose to enter by selecting either a particular textbook they are using or an item from a past examination paper, and follow it through.

There are two types of links. Firstly, there are pop-up screens which explain a point. Icons are used to indicate these pop-up screens. Secondly, there are jumps, indicated by underlines (on the screen they are underlined in green) which take the user to another part of the database. For example, users reading a screen about how to teach organisational strategies for composing can jump to the 'Pedagogic Grammar' database to see how teaching of a grammatical point can fit in with the teaching activity suggested on the specific screen the user is reading. The following example screen from **Organising Ideas: Spider Maps** shows some of these features. The users can jump to **Generating Ideas** by clicking **Brainstormed Ideas** at the beginning, or to the grammar database by clicking **Must** at the end, or to other ways of teaching planning or elaborating by clicking their choices. The icon in 1, when clicked, will display the topic as shown on the screen below.

Figure 3

A Sample Screen in the Teaching Ideas Database

Using Brainstormed Ideas to Make Spider maps

You can make an idea map with the brainstormed ideas on the board with the class rather than ask them to make the maps themselves, especially for lower forms.

A letter to the school principal asking for compulsory Mandarin lessons for form 4-5

1 Give students a topic and brainstorm.

2 Write the brainstormed ideas on the top of the board.

3 Put the main idea in the middle and underline ideas which are related to it.

4 Show them how the related ideas can be fitted in the map.

5 Look at the ideas not underlined and see whether they can be put under any of the underlined ideas.

6 Together with the students, make a spider map. You may need to add ideas if necessary.

7 Move on to macrostructural planning, if you wish. You can look at Must or Should on the grammar database to teach the use of these modals to indicate obligation.

[stands for an example, stands for blackboard, stands for further explanation]

BEST COPY AVAILABLE

3.5 The Way Ahead

This section has described the first exploratory steps taken in an ongoing odyssey through tools such as hypermedia, and futuristic concepts such as building up a participatory teacher support through interactive computer-mediated communication. Carlson (1988) points out that hypertext is an electronic means for enhancing four primary categories of idea processing: reading, annotating, collaborating and learning. All these categories have a role to play in the *TeleNex* network. The future is full of rich possibilities and potential.

4. Designing a Hypertext Pedagogic Grammar of English

Wu Kam-yin

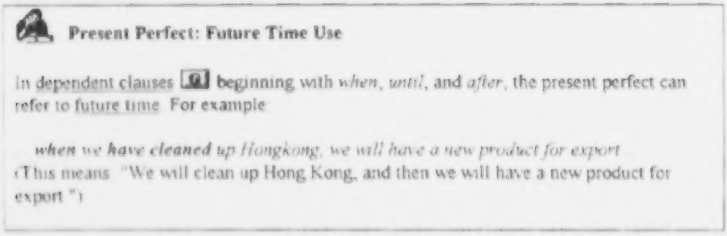
As a resource for participating teachers, a *Hypertext Pedagogic Grammar of English* (henceforth *Pedagogic Grammar*) is being developed for *TeleNex* as the grammar database. In this section, I shall describe some of the features of this grammar, and examine how its intended readership has affected the form it takes. But first, a definition of *hypertext grammar* is in order.

4.1 Hypertext Grammar

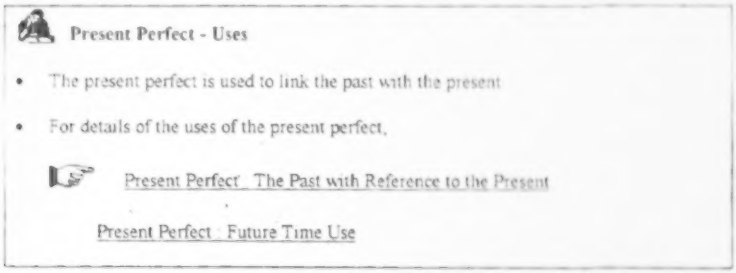
To explain what a hypertext grammar is, let me define *hypertext* first. Hypertext is a computer term, and refers to a method of organizing texts. More specifically, hypertext "stores text in a non-linear structure of nodes and links" so that it is possible to think of "information existing in a multi-dimensioned space" (Davis, 1993:18). In contrast, conventional magazines, newspapers, novels and so on organize texts in a linear structure.

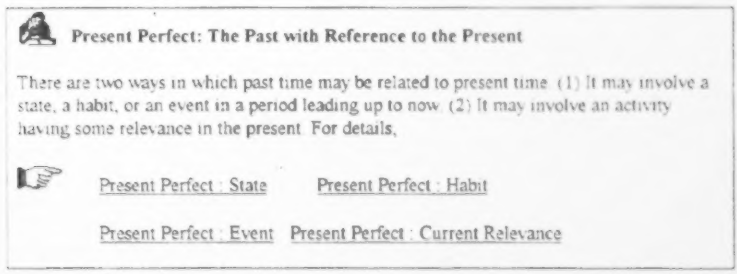
A *hypertext grammar*, as its name indicates, is a grammar written in a hypertext format. The following example, from *Hypertext Pedagogic Grammar of English*, gives a flavour of how it works. The screens have been slightly modified for this paper.

Suppose a teacher is reading the following information on a computer screen:


Present Perfect: Future Time Use
In dependent clauses beginning with *when*, *until*, and *after*, the present perfect can refer to future time. For example
when we have cleaned up Hongkong, we will have a new product for export
(This means "We will clean up Hong Kong, and then we will have a new product for export.")

When she comes across any underlined items on which she needs more information, she can, by pressing a button on a mouse, access the required information immediately. In other words, from the screen above, the teacher can go go the following two screens:


Present Perfect - Uses
• The present perfect is used to link the past with the present
• For details of the uses of the present perfect,
Present Perfect : The Past with Reference to the Present
Present Perfect : Future Time Use


Present Perfect: The Past with Reference to the Present
There are two ways in which past time may be related to present time. (1) It may involve a state, a habit, or an event in a period leading up to now. (2) It may involve an activity having some relevance in the present. For details,
Present Perfect : State
Present Perfect : Habit
Present Perfect : Event
Present Perfect : Current Relevance

Notice that each of these two screens is linked to other chunks of information, which the teacher can easily retrieve by, again, simply pressing a button on her mouse.

Having explained what a hypertext grammar is, I will now discuss three advantages that it has over conventional reference grammars:

1. The users of a hypertext grammar have more control over what to read; they do not have to follow any pre-set, linear structure of texts found in conventional reference grammars.

2. Information in a hypertext grammar, presented on stand-alone computer screens, is more easily digestible.

3. Retrieval of information is faster and easier, and this facilitates the looking up of cross-referenced materials. In this connection, it is worth noting that grammatical terms are mutually defining and thus in any grammars, extensive cross-referencing is essential (Greenbaum 1987:192). An efficient means of retrieving cross-referred items makes a hypertext grammar more user-friendly.

The *Hypertext Pedagogic Grammar of English* that is being developed for *TeleNex* has all these advantages and more. It is not simply a grammar in a computerized form. It is a grammar specially written for secondary schools English language teachers in Hong Kong, and contains information that we believe will be useful to them. I describe some of its other major features below.

4.2 Features of *Hypertext Pedagogic Grammar of English*

Terminology

We define carefully all the grammatical terms appearing in *Hypertext Pedagogic Grammar of English* for two reasons. First, we do not assume any technical knowledge about English linguistics on the part of the users. Second, there is a lack of standardization in the meaning of grammatical terms, which are sometimes used to mean different things by different grammarians. Thus, it is essential that all grammatical terms be defined clearly and unambiguously.

How much new terminology should be introduced is a difficult problem to solve. In Hong Kong, a lot of teachers are familiar with traditional grammatical terms, but a number of these terms are either misleading or unsatisfactory. For example, "present perfect" is less transparent in meaning than "past in present", a term used by Halliday (1985), but teachers are more familiar with the former term than with the latter. For this reason, we retain the term "present perfect" and explain that its meaning is past in present.

In other cases, unfamiliar terms such as "theme", "rheme", "reference" and so on are useful in talking about English texts, and we do not hesitate to use them. All these terms are defined carefully in *Hypertext Pedagogic Grammar of English*.

Authentic Examples

The need to use authentic texts in analyzing English has been properly emphasized and clearly explained by researchers such as Sinclair (1987) and Willis (1990). At the Teachers of English Language Education Centre, a corpus of authentic English has been built up. This consists of appropriately 1 million words of newspaper English and another 1.2 million words of spoken English. *Hypertext Pedagogic Grammar of English* draws its examples from this corpus, and this has enabled us to see, among other things, that the present perfect can be used to refer to future time, a meaning that is not discussed in many reference grammars.

In drawing examples from the corpus, *Hypertext Pedagogic Grammar of English* does not cite only isolated, decontextualized sentences. With the help of technology, the grammar stores in separate computer files the original texts from which example sentences have been taken. This allows the readers, if they so wish, to examine the use of authentic language in authentic contexts.

Focus on Meaning

Greenbaum (1988:45) observes that the intended readership of a grammar affects the form it takes. *Hypertext Pedagogic Grammar of English* is intended for secondary schools English language teachers in Hong Kong. In general, most of these teachers are familiar with linguistic form, but not as many of them know that grammar is, in the words of Halliday (1985:xvii), "a system for making meaning." Thus, in developing a grammar for these teachers, we pay more attention to function rather than structure. As an example, we explain only briefly how the various tenses in English are formed, but describe in detail how they can be exploited to express meanings. Using authentic texts, we demonstrate how more than one tense can co-occur in the same piece of writing. The advice sometimes given to students, that they should not shift from one tense to another in a single text, is simply a misconception.

4.3 Teaching Implications

The intended readership of *Hypertext Pedagogic Grammar of English* has influenced the form it takes in another way. We think that teachers consulting this grammar will be interested not only in understanding how the English language works, but also in finding out what teaching implications can be drawn from the grammatical description provided. For this reason, we discuss teaching implications where appropriate. These implications are based on a number of considerations, e.g. how frequently a grammatical item is used in English texts; how important it is to enable students to see the regularities in English grammar; and so on. To illustrate, while not all grammarians agree that the various uses of the simple past tense express remoteness (see e.g. Palmer 1974), we suggest that teachers teach this global meaning to students. Our rationale is that this will help students to realise that the different uses of the simple past are not unrelated and that there are regularities in grammar.

4.4 Teaching Ideas

Knowing what teaching implications to draw from grammatical analyses is one thing. Knowing how to present grammatical information to students is another. In *Hypertext Pedagogic Grammar of English*, we provide a bank of activities to enable teachers to teach grammar communicatively. A lot of these activities, supplied by teachers, have been tried out in Hong Kong classrooms and students have reacted favourably to them. We have good reasons to believe that they will work in other classrooms too.

Once the database is fully operational, we shall revise the grammar in the light of feedback from teacher users, so that it will be as useful to English teachers as possible.

Acknowledgement

This is an annual survey conducted by the Education Department of Hong Kong. The survey referred to was conducted in 1991. The authors wish to thank the Education Department for granting Dr Amy Tsui permission to use the raw data from the Department's 1991 survey of teachers, quoted in the first part of this paper. The figures quoted there are the results of the author's analysis of the raw data, in a research project funded by the Research Grants Council on the academic and professional background of ESL teachers in schools in Hong Kong.

References

Carlson, P.A. (1988). Hypertext: a way of incorporating user feedback in to on-line documentation. In E. Barrett (ed.), *Text, context and hypertext writing with and for the computer*. Cambridge, MA: MIT Press.

Coniam, D. (forthcoming). Designing an ability scale for English across the range of Hong Kong secondary school forms. *Hong Kong Papers in Linguistics and Language Teaching*, 17.

Davis, S.B. (1993). Hypertext and multimedia. *English Today*, 33, 9(1):17-24.

Davis, N. (1991). The lack of electronic communications in initial teacher training. *Journal of Computer Assisted Learning*, 7:2-6.

Denton, L. and Kelly, J. (1992). *Designing, writing and producing computer documentation*. New York: McGraw Hill.

Good, M. (1992). Participatory design of a portable torque-feedback device. In L. Borman & B. Curtis (eds.), *Human factors in computing systems: CHI '92 conference proceedings*. Amsterdam: North-Holland.

Greenbaum, S. (1987). Reference grammars and pedagogical grammars. *World Englishes*, 6(3):191-197.

Greenbaum, S. (1988). *Good English and the grammarian*. London: Longman.

Greenbaum, J., and Kyng M. (1991). *Design at work: cooperative design of computer systems*. Hillsdale, NJ: Erlbaum.

Halliday, M.A.K. (1985). *An Introduction to functional grammar*. London: Edward Arnold.

Henning, G. (1984). Advantages of latent trait measurement in language testing. *Language Testing*, 1:123-131.

Henning, G. (1987). *A guide to language testing*. Cambridge, MA: Newbury House.

Ip, W.C. (1989). A study of the potential of electronic bulletin boards as perceived by teachers. M.Ed. dissertation. Faculty of Education, The University of Hong Kong.

Linacre, M., & Wright, B.D. (1993). *Bigsteps, Version 2.4*. Chicago: Mesa Press.

Mangan, K. (1992). Computer networks help public schools forge new ties with higher education. *The Chronicle of Higher Education*, September 1992.

Meadows, J. (1992). International collaborations in teacher education: a constructivist approach to using electronic mail for communication in partnership with schools. *Journal of Information Technology for Teacher Education*, 1(1):113-125.

Millman, J. & Arter, J.A. (1984). Issues in item banking. *Journal of Educational Measurement*, 21:315-330.

Palmer, F.R. (1974). *The English Verb*. London: Longman.

Pugh S.L., (1993). Using case studies and collaborative computer-assisted communication to support conceptual learning in a teacher education course on critical reading. *Educational Technology, 33(11)*.

Sinclair, J.M. (ed.) (1987). *Looking Up* (pp. 150-159). London: Collins.

Tsui, A.B.M. (1993). TELEC Proposal, *Language Campaign Bulletin*, 7:6-7.

Van Thiel, C.C., & Zwarts, M.A. (1986). Development of a testing service system. *Applied Psychological Measurement*, 10:391-403.

Willis, D. (1990). *Lexical syllabus*. London: Collins.

Wright, B.D., & Stone, M.H. (1979). *Best test design*. Chicago: Mesa Press.